SIEMENS

POLYDOROS SX 50/80

RX

Generator

Service Instructions

Register 5

RX63-050.061.01.01.02 English

Replaces: 02.95

Documents required

– Operating instructions	RX63-050.201...
– Setting instructions	RX63-050.032... (acc. to the existing software)
– Start-up instructions	RX63-050.034... (acc. to the existing software)
– Wiring diagram	X2075
– Description of function	X2075

Important notes

- All texts marked with **"Warning"** contain information regarding potential hazards to health or life.
- All texts marked with **"Attention!"** contain information on hazards and measures to be taken to avoid such hazards.
- All texts marked with **"Note:"** contain additional information pertinent to the following work step; the note is a statement which is intended to provide a better understanding about the work step or to warn of unnecessary and avoidable difficulties that may be encountered during the work step.

Tools/measuring instruments required

– Usual service tools	
– Service PC	≥ 386 with ≥ 20 MHz clock frequency, a main memory of 4MB (RAM) and Windows ≥ 3.1
– PC connection cable, 5 m	99 00 440 RE 999
– 2-channel storage oscilloscope TEKTRONIX 2232	97 02 234 Y3155
– Set of Cu filters	44 06 120 RV 090
– Digital multimeter FLUKE 8060A	97 02 101 Y4290
– mAs meter	81 60 400 RE 999
– X-radiation detector	96 60 754 RE 999
– Shielded coax cable 6 m (BNC)	14 77 207 R4176
– Cathotest tube phantom	11 17 845 V8002
– Tube insert Bi 30/51	11 17 852 V8002

– kV/dose measuring instrument PTW-NOMEX	97 08 637 Y0388
– Protective ground wire tester	44 15 899 RV 090
– Transformer 1000:1	31 51 289 B2716
– Metal film resistor 10 Ohm; 0,5 W; 1 %	10 14 384 B0512

Warning! ***When operating the oscilloscope, the existing protective ground wire connection in the power line cable must not be interrupted in any case. For those measurements where any possible ground loops may affect the measuring result, the TEK isolating amplifier and the trigger attachment must be used.***

Safety notes

Attention! ***When performing work or tests, observe the product-specific safety notes contained in the documents and the general safety notes in Register 2 of the TI folder.***

- Prior to any intervention, shut the generator down with the power **OFF** switch on D200.

Warning! ***With the generator switched off, line voltage continues being applied to the transformer T1 and to the D200 fuse panel (see wiring diagram X2075-11).***
After shutdown of the generator, approx. 600 V D.C. voltage continue being applied to the inverter! This is signalled by the LEDs V8 and V9 on board D250 (see X2075-17).
Within about 1.5 minutes, the voltage drops to 0 V; the LEDs go out at approx. 30 V.

- In order to de-energize all system components (generator and connected units), set the system switch to **OFF**.

- To prevent unintentional release of high voltage or radiation, set the SS switch on D200 to **OFF** (no activation of inverters).

Warning! ***Checks and adjustments which must be performed with x-radiation switched on are marked with the radiation warning symbol ☢.***
During all procedures marked with this symbol, it is mandatory to wear radiation protection clothing.

- Prior to removing or inserting PC boards, the generator must be switched off; when doing this, observe the ESD regulations (see TI 219).

Type of error and service software information

- For servicing the POLYDOROS SX 50/80 generator, error numbers are displayed which support you in handling the tasks to be performed.
- You have to differentiate between two error types:
  - Errors which are displayed on the control console and stored in the generator,
    and
  - those errors which are stored in the generator only ---> Notices
    These errors do not directly limit the patient operation and thus they cannot be read out by the customer.
- The "Info" main menu of the POLYDOROS SX service software contains helpful information with the following submenus:

  "Show Errorlist..."
  - This Info file contains an error-number oriented error description with the possible error causes and offers remedial suggestions (trouble-shooting instructions).

  "Show Speedinfo..."
  - In this file, all generator-specific Speed Infos and modifications (with text, but without Figs.) are shown which have been published before the release of the service software.

  "Show Versioninfo..."
  - This file contains the new functions, improvements and fault rectifications of the corresponding software, related to the software version.

  Notes:
  - *These files are available both in German and English. The language desired can be selected in the "System" main menu via the submenu "User language..."*
  - *The files are updated with each new software version.*
- We are looking forward to receiving your feedback, suggestions for improvements and naturally error corrections, as well.

  Addresses:

Phone:	TD RX 3 - Hotline:	0 9131–84– 77 73
via	OPSIS:	OPSBRD::RX3HOTLINE

Service software "Diagnostics"

- The service software proper is contained in the "Diagnostics" main menu and is broken down into 3 submenus:

  "Error Log..."
  Using this function it is possible to load

  - errors which have already been stored from service software floppy disk 3- into the service software,
    and
  - the current errors from the generator (for this purpose, a connection between the generator and the PC must be present).

  Notes:
  - *The corresponding secondary conditions and last signals are listed together with the error numbers stored.*
  - *Direct changeover to the corresponding error description with the possible error causes is possible with the "Description ..." function key .*

  With an existing connection between:
  - the generator
    and
  - the PC
    and
  - a current "System" / "Connect" (generator is in the "Service-Mode"), the errors stored can be marked when exiting the "Error Log..." in the "Debug Error Trace" window with the "Yes" function key.
    This makes it possible to trace the "new" errors immediately during the next service call. When comparing the "new" errors with the "old" errors, you can detect whether the last measures taken to remedy the "old" errors have been effective.

  Note: *The errors cannot be erased.*

  "Tests"
  The tests are described in the relevant windows in detail.

  At present, the following tests can be performed:
  - "General..."
    - "T70 - Ignition pulse (large resonant circuit)"
    - "T71 - Ignition pulse (small resonant circuit)"
    - "T72 - Resonant circuit changeover"
    - "T90 - Variable iris position"
    - "T91 - Open iris"

  - "T92 - Close iris"
  - "T93 - Iris open/closed"
  - "T95 - Mirror position"
  - "T97 - Multiplier voltage"
- "Open Iris..."
- "Communication..."
- "Disable RAS-Error..."
- "Iontomat Drift..."

"Monitoring"

Using the functions under the submenu "Monitoring", "online" routines in the generator can be monitored:

- "Source Marks..."
- "Last Signals..."
- "Tube Load..."
- "Fluoroscopy..."
- "Iris..."
- "FC-Tester..."
- "DR-Tester..."
- "Test Printer..."

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